

P **Eleutherococcus senticosus**

Common Name(s)

Ci wu jia (Pinyin), Eleuthero Ginseng, Siberian Ginseng, Spiny Ginseng, Wu jia

How Used

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Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	(+)-LIRIODENDRIN	Stem Bark	--	60		
0	(+)-MEDIORESINOL-DI-O-BETA-D-GLUCOSIDE	Stem Bark	--	1.2		
0	(+)-PINORESINOL-DI-O-BETA-D-GLUCOSIDE	Stem Bark	--	2.3		
0	(+)-PINORESINOL-O-BETA-D-GLUCOSIDE	Stem Bark	--	8		
0	(+)-SYRINGARESINOL-O-BETA-D-GLUCOSIDE	Stem Bark	--	8.8		
0	(-)-SESAMIN	Root	--	230		
0	1,5-DI-O-CAFFEOYLQUINIC-ACID	Root	--	26.6		
3	2,6-DIMETHOXY-P-BENZOQUINONE	Stem Bark	--	5.5		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
3	3,4-DIHYDROXYBENZOIC-ACID	Root	--	--		
3	3,4-DIHYDROXYBENZOIC-ACID	Bark	--	313.3		
0	3-O-ALPHA-L-RHAMNOPYRANOSYL-(1,2)-ALPHA-ARABINOPYRANOSYL-OLEANOLIC-ACID Leaf	--	100			
1	ACANTHOSIDE-D	Root	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983.	Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	ALPHA-GLUCOSE	Root	--	--		
0	ALPHA-MALTOSE	Root	--	--		
32	ALPHA-TOCOPHEROL	Root	--	--		
8	AMYGDALIN	Rhizome	--	--		
0	ARIENSIN	Root	--	--		
112	ASCORBIC-ACID	Root	42	200	-0.5316446846418599	
0	ASH	Root	12600	60000	-0.2158449677296378	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	BETA-CALYCANTHOSIDE	Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
53	BETA-CAROTENE	Root	6	30	-0.24459504584619188	
0	BETA-GLUCOSE	Root	--	--		
1	BETA-HEDERIN	Root	--	--		
0	BETA-MALTOSE	Root	--	--		
47	BETA-SITOSTEROL	Root Bark	--	--		
47	BETA-SITOSTEROL	Root	--	--		
22	BETULINIC-ACID	Rhizome	--	--		
102	CAFFEIC-ACID	Root	--	--		
0	CAFFEIC-ACID-ETHYL-ESTER	Root	--	--	Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.	
28	CALCIUM	Root	840	4000	-0.3726684764630539	

Chemical	Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CAROTENE		Root	--	--		
77	CHLOROGENIC-ACID		Stem Bark	--	77.1		
77	CHLOROGENIC-ACID		Root	1000	6045	0.4924993995792986	
77	CHLOROGENIC-ACID		Tissue Culture	--	--		
24	CHROMIUM		Root	--	--		
0	CIWUJIANOSIDE-A-1		Leaf	--	50		
0	CIWUJIANOSIDE-A-2		Leaf	--	50		
0	CIWUJIANOSIDE-A-3		Leaf	--	80		
0	CIWUJIANOSIDE-A-4		Leaf	--	60		
0	CIWUJIANOSIDE-B		Leaf	--	500		
1	CIWUJIANOSIDE-C-1		Leaf	--	300		
1	CIWUJIANOSIDE-C-1		Root	--	--		
0	CIWUJIANOSIDE-C-2		Leaf	--	1300		
0	CIWUJIANOSIDE-C-3		Leaf	--	300		
0	CIWUJIANOSIDE-C-4		Leaf	--	400		
1	CIWUJIANOSIDE-D-1		Leaf	--	200		
1	CIWUJIANOSIDE-D-1		Root	--	--		
0	CIWUJIANOSIDE-D-2		Leaf	--	700		
0	CIWUJIANOSIDE-D-3		Leaf	--	100		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CIWUJIANOSIDE-E	Leaf	--	100		
2	COBALT	Root	--	--		
2	CONIFERIN	Root	--	83.3		
2	CONIFERIN	Stem Bark	--	--		
0	CONIFERALDEHYDE-GLUCOSIDE	Root	--	60		
6	CONIFERYL-ALCOHOL	Root	--	--		
5	CONIFERYL-ALDEHYDE	Root	--	--	Kameoka, H. and Nakai, K. 1987.	Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
12	COPPER	Leaf	--	--		
12	COPPER	Flower	--	--		
12	COPPER	Stem	--	--		
12	COPPER	Root	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	COUMARIN-X		Root	--	--	Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	D-GALACTOSE		Root	--	--	Abstract (See species file)
1	D-GLUCOSE		Root	--	--	Abstract (See species file)
0	D-SUCROSE		Root	--	4000	
0	DAUCOSTERIN		Root Bark	--	--	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	DAUCOSTERIN		Stem Bark	--	--	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
5	DAUCOSTEROL		Root	--	2100	2.3882043775879427
0	ELEUTHERAN-A		Root	--	--	
0	ELEUTHERAN-B		Root	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	ELEUTHERAN-C	Root	--	--		
0	ELEUTHERAN-D	Root	--	--		
0	ELEUTHERAN-E	Root	--	--		
0	ELEUTHERAN-F	Root	--	--		
0	ELEUTHERAN-G	Root	--	--		
0	ELEUTHERANS	Root	--	--		
0	ELEUTHERANS-A-G	Root	--	--		
0	ELEUTHEROCOCCAL	Plant	--	--		
0	ELEUTHEROCOCCUS-POLYSACCHARIDE-AS-2	Fruit	--	--		
0	ELEUTHEROCOCCUS-POLYSACCHARIDE-PES-A	Root	--	--		
0	ELEUTHEROCOCCUS-POLYSACCHARIDE-PES-B	Root	--	--		
0	ELEUTHEROCOCCUS-SAPONIN-D	Root	--	--		
0	ELEUTHEROSIDE-A	Root	1000	1000		
2	ELEUTHEROSIDE-B	Root	985	5000		
1	ELEUTHEROSIDE-B-1	Stem	--	--		
1	ELEUTHEROSIDE-B-1	Stem Bark	--	23.3		
1	ELEUTHEROSIDE-B-1	Root	1	1.1		
1	ELEUTHEROSIDE-B-1	Tissue Culture	--	3000		
0	ELEUTHEROSIDE-B-2	Root	1	1		

	Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	ELEUTHEROSIDE-B-4		Root	230	230		
1	ELEUTHEROSIDE-C		Root	--	4000		
1	ELEUTHEROSIDE-D		Tissue Culture	--	--		
1	ELEUTHEROSIDE-D		Root	--	800		
1	ELEUTHEROSIDE-D		Stem Bark	--	--		
2	ELEUTHEROSIDE-E		Root	1000	1000		
0	ELEUTHEROSIDE-E-5		Root	--	--		
0	ELEUTHEROSIDE-E-6		Root	--	--		
0	ELEUTHEROSIDE-E-7		Root	--	--		
0	ELEUTHEROSIDE-E-8		Root	--	--		
0	ELEUTHEROSIDE-F		Root	400	500		
0	ELEUTHEROSIDE-G		Root	250	600		
0	ELEUTHEROSIDE-I		Plant	--	--		
0	ELEUTHEROSIDE-J		Root	--	--		
0	ELEUTHEROSIDE-K		Leaf	--	3000		
0	ELEUTHEROSIDE-K		Plant	--	--		
0	ELEUTHEROSIDE-K		Root	--	--		
0	ELEUTHEROSIDE-L		Leaf	--	6000		
0	ELEUTHEROSIDE-L		Root	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	ELEUTHEROSIDE-L	Plant	--	--		
0	ELEUTHEROSIDE-M	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.	
6	ELEUTHEROSIDES	Root	6000	9000		
6	ELEUTHEROSIDES	Stem	6000	15000		
0	EO	Stem	2600	2600	-0.36140347033676956	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	EO	Fruit	5000	5000	-0.7227768403857732	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	EO	Leaf	3100	3100	-0.7419437024243408	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	EO	Root	8000	8000	-0.2779713881053115	
13	FALCARINDIOL	Root	--	--		
0	FAT	Root	4830	23000	0.004007840419506115	
61	FERULIC-ACID	Root	--	--		
0	FIBER(CRUIDE)	Root	--	100000	-0.33350960238524374	
0	FIBER(DIETARY)	Root	--	360000	-0.41968027948872727	
2	FRIEDELIN	Root	--	--		
1	GALACTOSE	Root	--	--		
7	GLUCOSE	Root	--	--		
0	GLUCOSYL-ISOFRAXIDIN	Root	--	175		
0	GLYCANS	Root	--	--		Abstract (See species file)
0	GUM	Root	14700	70000	-1.5011732500816033	
0	HEDERASAPONIN	Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	HEDERASAPONIN-B	Leaf	800	10000		
0	HEDERASAPONIN-B	Root	--	--		
6	IRON	Root	2.5	12	-0.42421971919788043	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
5	ISOFRAXIDIN	Root	--	40	-1	
5	ISOFRAXIDIN	Tissue Culture	--	--		
5	ISOFRAXIDIN	Stem Bark	--	21.6		
0	ISOFRAXIDIN-7-O-ALPHA-L-GLUCOSIDE	Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	ISOFRAXOSIDE	Root	--	--		
0	ISOPIMARA-9(11)-15-DIEN-19-OL	Root	--	--		
10	LIGNANS	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
4	LIRIODENDRIN	Root	116.6	2800		
4	LIRIODENDRIN	Tissue Culture	--	--		
65	MAGNESIUM	Root	1050	5000	1.297512854456367	

Chemical Plant Part			Low PPM	High PPM	StdDev	Reference	Citation
14	MANGANESE		Root	0.6	3	-0.5100505761569326	
1	METHYL-ALPHA-D-GALACTOSIDE		Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
0	MUSSENIN-B		Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	MUSSENIN-B		Leaf	--	3000		
39	NIACIN		Root	15	72	0.6306869414315236	
64	OLEANOLIC-ACID		Leaf	--	--		
64	OLEANOLIC-ACID		Root	--	84	-0.6809540909763485	
25	P-COUMARIC-ACID		Root	--	--		
13	P-HYDROXY-BENZOIC-ACID		Root	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
24	PECTIN	Root	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PHENYLPROPANOIDS	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
4	PHOSPHORUS	Root	1470	7000	0.6118650125540502	
2	PHYTOSTEROLS	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
0	POLYSACCHARIDE	Root	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	POLYSACCHARIDE-PES-A	Root	--	--	Kameoka, H. and Nakai, K. 1987.	Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	POLYSACCHARIDE-PES-B	Root	--	--	Kameoka, H. and Nakai, K. 1987.	Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
14	POTASSIUM	Root	2100	10000	-0.42314232638420207	
0	PROTEIN	Root	27300	130000	0.1301143428510278	
43	PROTOCATECHUIC-ACID	Stem Bark	--	--		
0	PROTOCATECHUIC-ACID-3'-O-BETA-D-GLUCOSIDE	Stem Bark	--	--		
0	RESIN	Root	--	--	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
15	RIBOFLAVIN	Root	0.5	2.4	-0.3664612276506602	
5	SAPONINS	Plant	--	--		
44	SCOPOLETIN	Stem Bark	--	--		
60	SELENIUM	Root	0.2	1	-0.29131634494743897	
0	SENTICOSIDE-A	Leaf	--	--		
0	SENTICOSIDE-B	Leaf	--	--		
0	SENTICOSIDE-C	Leaf	--	--		
0	SENTICOSIDE-D	Leaf	--	--		
0	SENTICOSIDE-E	Leaf	--	--		
0	SENTICOSIDE-F	Leaf	--	--		
15	SESAMIN	Root	--	230		
4	SILICON	Root	--	--		
0	SINAPALDEHYDE-GLUCOSIDE	Root	--	73.3		
0	SINAPYL-ALCOHOL-4-O-(2'-ALPHA-L-APIOSYL-BETA-D-GLUCOPYRANOSIDE)	Stem Bark	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
1	SINAPYLALCOHOL	Root	--	--		Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
1	SODIUM	Root	21	99	-0.46667660193674004	
8	STEARIC-ACID	Rhizome	--	--		
0	STEROL	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
14	SUCROSE	Root	--	--		Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	SUGARS	Root	18900	90000	-0.13436730873315797	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	SUGARS	Flower	--	--		
1	SYRINGARESINOL	Root	--	--		
2	SYRINGARESINOL-DI-O-GLUCOSIDE	Root	--	1300		
0	SYRINGARESINOL-DIGLUCOSIDE	Root	--	--	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses	
1	SYRINGARESINOL-GLUCOSIDE	Root	--	790		
6	SYRINGIC-ACID	Root	--	--		
9	SYRINGIN	Stem Bark	--	24		
9	SYRINGIN	Root	40	4000		
9	SYRINGIN	Tissue Culture	--	--		
9	SYRINGIN	Stem	--	--		
9	SYRINGIN	Root Bark	--	1370		
0	THIAMINE	Root	0.4	2	-0.46176774546761545	
24	VANILLIC-ACID	Root	--	--		
28	VANILLIN	Root	--	--		
0	VIT-E	Root	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
75	VITAMIN-E	Root	--	--	Kameoka, H. and Nakai, K. 1987.	Components of essential oil from the root of <i>Glycyrrhiza-glabra</i> . Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	WATER	Root	--	790000	0.13584730298158998	
0	WAX	Root	--	--	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses	
77	ZINC	Root	0.9	4.2	-0.8749958361247925	